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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,660	09/19/2001	Steven M. Meehler	CRC-128	1159

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SQUARE D COMPANY  
INTELLECTUAL PROPERTY DEPARTMENT  
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EXAMINER

LUK, LAWRENCE W

ART UNIT PAPER NUMBER

2838

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/955,660

Applicant(s)

MEEHLEDER ET AL.

Examiner

Lawrence W Luk

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MW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murowaki et al. (6,341,066) in combination with Kinoshita et al. (4,684,183).

As to claims 1, 15 and 17, Murowaki et al. disclose in figure 2A, column 5, lines 40-49, housing (7) formed of heat conductive material; an electrical apparatus (3, 5) positioned within said housing (7); and in figure 2A, column 9, lines 49 to column 10, line 16, a flexible printed circuit board (13), said board having a circuit printed thereon, and further having at least one heat generating electrical component (5) mounted on the outside surface (11) thereof, whereby in figure 2A, column 6, line 55 to column 7, line 17, heat generated upon operation of said electrical component is transferred to said housing and dissipated therefrom into the surroundings, but fails to disclose a flexible printed circuit board attached to at least a portion of the exterior of the housing.

Kinoshita et al. disclose in figure 1A, column 1, lines 51-64, a flexible printed circuit board (30) attached to at least a portion of the exterior of the housing.

It would have been obvious to person having ordinary skill in the art at the time of the invention was made to modify the device of Murowaki et al. to include the flexible

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printed circuit board attached to at least a portion of the exterior of the housing as taught by Kinoshita et al. for improved while suppressing increase in size and increase in manufacturing cost.

As to claims 2 and 16, Kinoshita et al. disclose in column 1A and lines 50-62, the Housing (10) has a plurality of exterior surfaces and in which said flexible circuit board (30) is adhered to at least some of said plurality of exterior surfaces.

As to claims 3 and 4, Kinoshita et al. in view of Murowaki et al. are applied Supra, and further Kinoshita et al. disclose in column 4, lines 3-12, said electrical apparatus is an electro-mechanical device, in which said printed circuit and said at least one electrical component comprise a control system for said electro-mechanical device.

As to claim 9, Kinoshita et al. in view of Murowaki et al. are applied Supra, and further Murowaki et al. disclose in column 3, line 66, said electro-mechanical device is an actuator.

As to claim 10, Kinoshita et al. in view of Murowaki et al. are applied Supra, and further Murowaki et al. disclose in column 5, lines 9-15, said electro-mechanical device is a solenoid.

As to claim 11, Kinoshita et al. in view of Murowaki et al. are applied Supra, and further Murowaki et al. disclose in column 6, lines 42-54, said electro-mechanical device is a position sensor.

As to claims 12 and 18, Kinoshita et al. in view of Murowaki et al. are applied Supra, and further Murowaki et al. disclose in column 5, lines 41-60, said printed circuit

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and said at least one electrical component comprises a system for receiving and processing signals from said electro-mechanical device.

As to claims 13 and 19, Kinoshita et al. in view of Murowaki et al. are applied Supra, and further Murowaki et al. disclose in column 4, lines 5-13, said partial circuit and said at least one electrical component further comprise a system for sending a control signal to said electro-mechanical device in response to a signal received from said electro-mechanical device.

As to claims 14 and 20, Kinoshita et al. in view of Murowaki et al. are applied Supra, and further Murowaki et al. disclose in column 6, lines 8-19, said printed circuit and said at least one electrical component further comprise means for transmitting processed signals to a location outside said electrical device.

3. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murowaki et al. (6,341,066) in combination with Kinoshita et al. (4,684,183) as discussed above, and further in combination with Baurand et al (5,834,934).

As to claims 5 and 7, Murowaki et al. and Kinoshita et al. discloses the apparatus as claimed, except for said electro-mechanical device is a circuit breaker and a relay.

Baurand et al. disclose in figure 2 and column 2, lines 55-58, said electro-mechanical device is a circuit breaker and a relay.

It would have been obvious to person having ordinary skill in the art at the time of the invention was made to modify the device of Murowaki et al. and Kinoshita et al. to

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include a electro-mechanical device is a circuit breaker and a relay as taught by Baurand et al. for printed circuit board holding the processing circuit.

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murowaki et al. (6,341,066) in combination with Kinoshita et al. (4,684,183) as discussed above, and further in combination with Adam et al (5,528,093).

As to claim 6, Murowaki et al. and Kinoshita et al. discloses the apparatus as claimed, except for said electro-mechanical device is a motor.

Adam et al. disclose in figure 1 and column 1, lines 53-61, said electro-mechanical device is a motor.

It would have been obvious to person having ordinary skill in the art at the time of the invention was made to modify the device of Murowaki et al. and Kinoshita et al. to include a electro-mechanical device is a motor as taught by Adam et al. for the printed circuit board to supported inside the motor housing and gear housing.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murowaki et al. (6,341,066) in combination with Kinoshita et al. (4,684,183) as discussed above, and further in combination with Byrd (5,707,249).

As to claim 8, Murowaki et al. and Kinoshita et al. discloses the apparatus as claimed, except for said electro-mechanical device is a rheostat.

Byrd disclose in figure 2 & 8 and column 1, lines 25-29, column 5 and line 57, said electro-mechanical device is a rheostat (89).

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It would have been obvious to person having ordinary skill in the art at the time of the invention was made to modify the device of Murowaki et al. and Kinoshita et al. to include a electro-mechanical device is a rheostat as taught by Byrd for providing a device holder that attaches to a printed circuit board.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Luk whose telephone number is (703)305-0617. The examiner can normally be reached on 7 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (703) 308-1680. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-7724 for regular communications and (703)305-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1782.

LWL

December 15, 2003

*Lawrence Luk*  
12/15/03